

REMARKS

The present Amendment amends claims 9 and 10 unchanged. Therefore, the present application has pending claims 9 and 10.

35 U.S.C. §103 Rejections

Claims 9 and 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Tanaka et al., *Gateway Application for Automotive Network System "BEAN"* to Tanaka et al. ("Tanaka") in view of U.S. Patent No. 5,815,071 to Doyle. This rejection is traversed for the following reasons. Applicants submit that the features of the present invention, as now more clearly recited in claims 9 and 10, are not taught or suggested by Tanaka or Doyle, whether taken individually or in combination with each other in the manner suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Amendments were made to the claims to more clearly describe features of the present invention. Specifically, amendments were made to the claims to more clearly recite that the present invention is directed to a distributed computer system for an automobile as recited, for example, in independent claims 9 and 10.

The present invention, as recited in claim 9 and as similarly recited in claim 10, provides a distributed computer system for an automobile. The computer system includes a first computer network to which at least one device that periodically sends or receives messages without demand is connected. The computer system also includes a second computer network to which at least one device that sends or receives messages in response to an event or demand is connected. The computer

system further includes a gateway connected to the first and second computer networks.

The gateway includes a periodic message receiving means that receives messages which the first computer network sends periodically, and a buffer means that stores the messages received by the periodic message receiving means. The gateway also includes a message value change detecting means that detects a change of the value of the data included in each of the messages stored in the buffer means. Also included in the gateway is an event message sending means that produces a message from the data stored in the buffer means when the message value change detecting means detects the change of the value of the data, and that delivers the produced message to the second computer network.

According to the present invention, the at least one device connected to the first computer network that periodically sends or receives messages is an engine controlling device or an adaptive cruise control (ACC) controlling unit. Also according to the present invention, the at least one device connected to the second computer network that sends or receives messages in response to the event or demand is a navigation system or an internet terminal. Furthermore, according to the present invention, the message value change detecting means detects a change of the value of the data by checking whether or not the this-time-value of the received message is different from the last-time-value of the received message. The prior art does not teach or suggest all of these features.

The above described features of the present invention, as now more clearly recited in the claims, are not taught or suggested by any of the references of record.

Specifically, the features are not taught or suggested by either Tanaka or Doyle, whether taken individually or in combination with each other.

Tanaka teaches applying a gateway application to an automotive network system. However, there is no teaching or suggestion in Tanaka of the distributed computer system for an automobile as recited in claims 9 and 10 of the present invention.

Tanaka discloses where in applying a LAN to automotive electronics systems, an optimal protocol has been adopted for each system, such as a body electronics system, an entertainment system, a service system, and a power train system. As a low cost communication protocol, "BEAN" (Body Electronics Area Network) is adapted to a wider range of functions on a vehicle, and ECU's (engine control unit) numbers are increased. Tanaka rationalizes those network systems with the gateway function on a delegated ECU for each LAN system on a vehicle. This system also realizes the connection to after market products by data exchange through the gateway function, while securing vehicle failsafe.

Features of the present invention, as recited in claim 9, and as similarly recited in claim 10, include: a first computer network to which at least one device that periodically sends or receives messages without demand is connected; a second computer network to which at least one device that sends or receives messages in response to an event or demand is connected; and a gateway connected to said first and second computer networks. Tanaka does not disclose this combination of features.

The present invention provides a gateway that connects networks that are different in character, such as an information system network and a gateway and a

control system network, for example. The exchange of information between the information system network and the control system network is performed, and a distributed system is provided using the gateway. The gateway sends and receives a message which is transmitted periodically, as well as sends and receives a message which is transmitted in response to an event, or a request or demand. This is quite different from the prior art.

In the prior art, there is not teaching or suggestion of a gateway that connects networks, which are different in character, such as an information system network and a control system network. Specifically, there is no disclosure in the prior art of the transmission of information between an information system network, in which information is transmitted in response to an event, and a control system network in which information is transmitted at a constant period.

Therefore, Tanaka fails to teach or suggest "a first computer network to which at least one device that periodically sends or receives messages without demand is connected; a second computer network to which at least one device that sends or receives messages in response to an event or demand is connected; and a gateway connected to said first and second computer networks" as recited in claim 9, and as similarly recited in claim 10.

The above noted deficiencies of Tanaka are not supplied by any of the other references of record, namely Doyle, whether taken individually or in combination with each other. Therefore, combining the teachings of Tanaka and Doyle in the manner suggested by the Examiner still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

Doyle teaches a method and apparatus for monitoring parameters of vehicle electronic control units. However, there is no teaching or suggestion in Doyle of the distributed computer system for an automobile as recited in claims 9 and 10 of the present invention.

Doyle discloses a system for monitoring and the adjustment of control unit parameter settings of vehicle electronic control units. The monitoring system may be implemented in a vehicle which incorporates one or more electronic control units for regulating one more operational parameters of the vehicle in accordance with corresponding control unit parameter settings. In an exemplary implementation, the vehicle is equipped with a mobile communications terminal (MCT), which receives from a base station a list of operational parameters to be monitored. Each of the electronic control units, as well as a memory unit, is connected to an internal data link of the vehicle. When a parameter value within the memory unit corresponding to a given control unit is changed, a message is provided to the base station specifying the value currently registered by the control unit. The currently registered value is then compared to an expected parameter value, and an error message is generated if disagreement exists there between. The system also allows vehicle control unit parameter settings to be adjusted from a remote location such as a base station. The MCT of each vehicle is disposed to generate message packets containing updated control unit parameter information received from the base station. The message packets are then sent to a selected electronic control unit over the data link, thereby allowing the updated control unit parameter information to be loaded therein.

Features of the present invention, as recited in claim 9, and as similarly recited in claim 10, include: a first computer network to which at least one device that periodically sends or receives messages without demand is connected; a second computer network to which at least one device that sends or receives messages in response to an event or demand is connected; and a gateway connected to said first and second computer networks. Doyle does not disclose this combination of features.

As previously discussed, the present invention provides a gateway that connects networks that are different in character, such as an information system network and a gateway and a control system network, for example. The exchange of information between the information system network and the control system network is performed, and a distributed system is provided using the gateway. The gateway sends and receives a message which is transmitted periodically, as well as sends and receives a message which is transmitted in response to an event, or a request or demand. This is quite different from the prior art.

In the prior art, there is not teaching or suggestion of a gateway that connects networks, which are different in character, such as an information system network and a control system network. Specifically, there is no disclosure in the prior art of the transmission of information between an information system network, in which information is transmitted in response to an event, and a control system network in which information is transmitted at a constant period.

Therefore, Doyle fails to teach or suggest “a first computer network to which at least one device that periodically sends or receives messages without demand is connected; a second computer network to which at least one device that sends or

receives messages in response to an event or demand is connected; and a gateway connected to said first and second computer networks” as recited in claim 9, and as similarly recited in claim 10.

Both Tanaka and Doyle suffer from the same deficiencies, relative to the features of the present invention, as recited in the claims. Therefore, combining the teachings of Tanaka and Doyle in the manner suggested by the Examiner does not render obvious the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 U.S.C. §103(a) rejection of claims 9 and 10 as being unpatentable over Tanaka in view of Doyle are respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references used in the rejection of claims 9 and 10.

In view of the foregoing amendments and remarks, Applicants submit that claims 9 and 10 are in condition for allowance. Accordingly, early allowance of claims 9 and 10 is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Mattingly, Stanger & Malur, P.C., Deposit Account No. 50-1417 (referencing Attorney Docket No. 503.39781X00).

Respectfully submitted,

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